

## **The Impact of Digital Leadership and Innovative Behavior on Innovation Performance: The Moderating Role of Absorptive Capacity**

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**Abstract.** While digital leadership and innovative behavior are known drivers of innovation performance, their impact in the restaurant industry remains underexplored. This study aimed to address this gap by examining their influence along with the moderating role of absorptive capacity among cafes/restaurants in Indonesia. The analysis in this study is a quantitative analysis with a structural equation model using smart-PLS. This study analyzed 110 supervisors and managers of modern cafes and restaurants in Yogyakarta and proved that digital leadership and innovative behavior positively influence innovation performance. This study also proved that absorptive capacity is able to strengthen the influence of digital leadership on innovation performance, but is unable to strengthen the influence of innovative behavior on innovation performance. This research is expected to contribute both scientifically and actual implementation in the field as an effort to improve the company's innovation performance.

**Keywords:** Innovation performance, digital leadership, innovative behavior, absorptive capacity, culinary industry

## **1. Introduction**

The current technological developments and the rise of digitization require business actors to be more aggressive in carrying out innovation (Anjaningrum & Rudamaga 2019; Nafiu et al. 2020; Lo & Tian, 2020). Firms with the most innovative products, processes, or procedures have a great opportunity to lead the market (Puspita et al. 2020; Ferreira et al. 2020; Aziz & Samad 2016). Therefore, business actors must be able to create innovation performance in order to compete and gain a wide market share.

In the digital era, there is a change in business models from traditional business models to digital. The challenge of contemporary companies today is that there is a very urgent demand to quickly accelerate into digital business model innovation (Trischler & Li-Ying., 2023). Benitez et al. (2022) explain that when companies will implement digital leadership, companies must digitize their respective platforms. This is because companies must be able to develop the concept of digital leadership capabilities and platform digitization capabilities so that they have an impact on innovation performance. The research results of Al Husban et al. (2021) explain that innovation capabilities play a mediating role in the relationship between digital leadership and organizational performance. These conditions indicate that the development of leadership theory supported by innovation-based models can be used to improve organizational performance. Decision makers can increase investment in research and development activities and can integrate a culture of innovation at all managerial levels of the organization.

Making changes to improve innovation performance must be started with the right leadership. Recently, a number of scholars have developed a leadership theory that fits the demands of the current digital era and industry 4.0, namely digital leadership (Benitez et al. 2022; Borah et al. 2022). Firms must be directed and designed to be adaptable and able to keep up with digital and technological developments. In this matter, Weill & Ross (2009) stated that firms must standardize technology, develop infrastructure cooperation, improve discipline, and create integrated data to achieve simplification and agility.

Within the discussion for the determinants of innovation performance, several research gaps have been identified. First, the role of digital leadership has been empirically proven to improve innovation performance (Benitez et al. 2022; Borah et al. 2022; Mihardjo et al. 2019; Sasmoko et al. 2019; Mihardjo & Rukmana, 2019). Digital leadership can be optimized in improving innovation performance through firm digitization. Firms must be able to implement digital platforms in business processes and activities (Benitez et al. 2022). The study from Borah et al. (2022) found that digital leadership is able to have a direct influence on firm innovation and is also able to moderate the influence of the use of social media on firm innovation. Therefore, it can be interpreted that the better the implementation of digital leadership, it can increase innovation through the use of social media. However, from some previous literature, different results were found by Theng et al. (2021) who suggested that digital transformation does not affect firm innovation. Likewise, Muniroh et al. (2022) mentioned that digital leadership has no influence on employee performance, as this performance includes their ability to innovate. The inconsistency of results from several literatures indicates that the influence of digital leadership on innovation performance must be further analyzed.

The second research gap is the inconsistency of analysis from previous literature suggests the need to develop other variables in an effort to improve innovation performance. A number of literatures propose innovative behavior as a variable that can improve firm innovation performance (Dedahanov et al. 2017; Li et al. 2019; Lukes & Stephan, 2017). One of which is innovative behavior, which refers to the act of employees in using personal experience to develop valuable ideas and create new products and services (Li et al. 2019). However, there is still inconsistency found in the previous studies. Purwanto et al. (2021) analyzed the role of innovation in Indonesian consumer goods company and found that there is no influence of innovation on firm performance. The finding suggests that the role of innovation can be different depends on the context of industry, firms, and geographical locations. It

signifies the importance of analyzing the role of innovative behavior further.

This study attempts to fill the existing research gap and add to the discussion for the topic regarding firm innovation through digital leadership and innovative behavior. In addition, this study also emphasize that digital leadership and innovative behavior needs to be strengthened by employees' ability in digging information, which is also known as absorptive capacity (Azzam, 2016; Samaeemofrad & van den Herik, 2020; Chatterjee et al. 2022; Li et al. 2022). Azzam (2016) found that absorptive capacity can strengthen employee innovative behavior in enhancing firm innovation. Furthermore, Chung et al. (2022) also identified that absorptive capacity can strengthen the influence of digital adoption toward firm innovation.

The purpose of this study was to test and analyze: (1) positive influence of Digital leadership on innovation performance, (2) positive influence of Innovative behaviors on innovation performance, (3) moderating effect of absorptive capacity in the relationship between digital leadership and innovation performance, and (4) moderating effect of Absorptive capacity in the relationship of innovative behavior on innovation performance.

This research is expected to contribute both theoretical and managerial related to the contribution of digital leadership and Innovative behavior in an effort to improve the company's innovation performance moderated by Absorptive capacity.

## **2. Theoretical Background**

### **2.1. Digital Leadership and Innovation Performance**

Today's technological and industrial developments require firms to undertake digital transformation. Within this process of digital transformation, the role of the leader is crucial, hence a specific leadership style called digital leadership is developed. Digital leadership is a combination of transformative leadership style and the use of digital technology. It is also defined as a combination of culture and leadership competence in optimizing the use of digital technology to create value for the firm (Rudito & Sinaga, 2017; Mihardjo & Rukmana, 2019). The digital leader has five characters, which include creative, visionary, hardworking, curious, and sensitive to the circumstances around (Zhu, 2015). Leaders must be able to face and cope with fierce competition within the complex and dynamic ecosystems. Several literature points to four factors that leaders in the digital age must beware of: volatility, uncertainty, complexity, and ambiguity (VUCA) (Sandell, 2013; Mihardjo & Rukmana, 2019) thus firms must be innovative in order to be highly competitive.

Benitez et al. (2022) developed four measures in digital leadership, namely: (1) the ability to exploit skills and technological trends; (2) the capacity to innovate in technological aspects, develop skills and IT implementation in the company; (3) the ability to coordinate staff with different skills; and (4) the ability to influence stakeholders to adapt to change and advances in technology. Additionally, Borah et al. (2022) measured digital leadership from five aspects, which involves the ability of analyzing employee skills and character, instilling confidence in the organization, being a mentor and educator in the organization, providing and facilitating openness to information, criticism, and new ideas, as well as being confident with the firm ability to adjust to rapidly changing environments. Empirically, digital leadership has been proven to increase innovative performance (Benitez et al. 2022; Borah et al. 2022; Mihardjo et al. 2019; Sasmoko et al. 2019; Mihardjo & Rukmana, 2019). Prior studies have found that digital leadership can play a role in improving innovation performance through firm digitization. In this regard, firms must be able to utilize digital platforms within the process and activities of their business. Borah et al. (2022) found that digital leadership can directly influence firm innovation while also moderate the impact of the use of social media on firm innovation. Hence, it can be interpreted that the better the digital leadership implementation, the more innovation can be achieved through the use of social media. However, from some previous literature, different results were found by Theng et al. (2021) who mentioned that digital transformation does not affect company innovation. Likewise, Muniroh et al. (2022) found that digital leadership has no influence on employee performance, which

include employees' ability to innovate. The inconsistency of findings from several literatures shows that the nexus between digital leadership and innovation performance must be further analyzed. Therefore, the following hypothesis is formulated:

H1: Digital leadership positively influences innovation performance

## **2.2. Innovative Behavior and Innovation Performance**

Innovation is organization's success in implementing creative ideas (Sniukas, 2020). Innovation can also be defined as the regeneration, acceptance, and implementation of new ideas, processes, products, and services (Ferreira et al. 2020). On the other hand, innovation can also be described as the process of creating new materials, services, and techniques in the firm (Aziz & Samad, 2016). It can also be understood as the introduction of new products, services, and processes at the opening of new markets, and its impact on economic development (Hakeem & Raissi, 2023; Adityawan et al., 2023; Anjaningrum & Rudamaga, 2019; Nafiu et al. 2020). The basis of innovation in organizations are ideas from organizational members that are introduced, developed, and implemented (Dedahanov et al. 2017). Therefore, organizations or firms rely heavily on their employees in creating innovation as they are the main source of ideas and creativity to create innovation. Innovative behavior is the act of employees in using personal experience to develop valuable ideas and create new products and services (Li et al. 2019). These ideas and creativity developed will improve the innovation performance of the firm and help them produce innovative products and services (Hakeem & Raissi, 2023; Adityawan et al., 2023)

Scott & Bruce (1994) defined innovative behavior as productive and innovative actions of employees for the benefit of personal performance and organizational performance to respond to market changes and demands. Kleysen & Street (2001) divided innovative behavior into 5 stages, namely looking for opportunities, generating ideas, analyzing and developing ideas, planning implementation, and implementing the ideas. In addition, Li et al. (2019) outlined several indicators of employees' innovative behavior, namely looking for opportunities to develop products and services, being sensitive to changes and existing problems, proposing creative ideas, analyzing problems from different perspectives, testing and discussing new ideas, methods, and solutions, analyzing the weaknesses and shortcomings of new ideas that arise, influencing other employees to have opinions and spark ideas, taking risks, daring to change and being critical. Lukes & Stephan (2017) used seven aspects in measuring innovative behavior, namely idea generation (always thinking about creating new solutions and ideas), idea search (gathering information, knowledge, and opinions to create new ideas), idea communication (communicating ideas with others), implementation planning activities (planning the implementation of ideas), involving others (involving others in the implementation of ideas), overcoming obstacles (never giving up and trying hard), and innovation outputs (successfully creating innovations). A number of literatures propose innovative behavior as a variable that can improve firm innovation performance (Dedahanov et al. 2017; Li et al. 2019; Lukes & Stephan, 2017). However, from several literatures that emphasize the importance of innovation, there are still inconsistencies found, such as Purwanto et al. (2021) who analyzed the role of innovation in Indonesian consumer goods companies and found that there is no influence of innovation on firm performance. This shows that the role of innovation differs between the industry, geographical locations, and even the context of the firm itself. Therefore, this specific role of innovative behavior must be further analyzed. The hypothesis is formulated as follows:

H2: Innovative behavior positively influences innovation performance

## **The Moderating Role of Absorptive Capacity**

Absorptive capacity is the ability to acquire, assimilate, and then exploit information to improve firm performance (Sripada, 2020). Absorptive capacity can also be defined as organizational activities that include the integration and utilization of knowledge to improve firm performance (Song et al. 2020).

Another definition of absorptive capacity is also expressed as the firm's ability to create value, build cooperation, and exploit new ideas (Pangarso et al. 2020). Absorptive capacity has become an important ability for firms to create competitiveness by developing new products or increasing flexibility (Sripada, 2020). Broadly speaking, it can be concluded that absorptive capacity is the organization's ability to acquire information and utilize it for the benefit of organizational development. Information is an important aspect of business strategy not only for large firms but also for micro, small, and medium enterprises (Kurniawan et al. 2020). For firms, absorptive capacity is an important source of competitive advantage. This is because most industries have rapidly changing knowledge and strong intellectual property protection. Absorptive capacity can be described in two dimensions in the strategic management process, which is potential absorptive capacity and realized absorptive capacity, and both are the sources of strategic competitiveness. In addition, in some cases, absorptive capacity can be improved according to several aspects including stakeholder experience, organizational strategy flexibility, network capability, and consumer preferences (Liao et al. 2017). Digital leadership and innovative behavior can be strengthened by employees' ability to explore information, which is known as absorptive capacity (Azzam, 2016; Samaeemofrad & van den Herik, 2020; Chatterjee et al. 2022; Li et al. 2022). Azzam (2016) found that absorptive capacity can strengthen the influence of employee innovative behavior in improving firm innovation performance. In a similar vein, Chung et al. (2022) found that absorptive capacity is able to strengthen the influence of digital adoption on firm innovation. Therefore, the following hypothesis is formulated:

H3: Absorptive capacity moderates the influence of digital leadership on innovation performance

H4: Absorptive capacity moderates the influence of innovative behavior on innovation performance

As for the previous research is mentioned on the Table 1.

Table 1. The previous research

| No | Variabel & Definition                                                                                                                                                                                                                                                                                                                                                                                                                             | Related Literature  | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | <p><b>Digital Leadership on Innovation Performance</b></p> <p>" Digital leadership is a combination of transformative leadership style and the use of digital technology. It is also defined as a combination of culture and leadership competence in optimizing the use of digital technology to create value for the firm" (Rudito &amp; Sinaga, 2017; Mihardjo &amp; Rukmana, 2019)</p> <p><b>Innovation performance</b> is considered the</p> | Benitez et al. 2022 | Theorized that digital leadership influences innovation performance by digitalizing the firm's platform. A multiple case study of ten companies was deployed to derive a theoretical model relating digital leadership and innovation performance. The resulting model was empirically tested on a sample of 117 European firms. This research find that digital leadership improves a firm's innovation performance by digitalizing the firm's platform. This research that contribute to IS research by theoretically developing the concepts of digital leadership capability and platform digitization capability and empirically analyzing the relationship of these two critical IT capabilities and their impact on innovation performance. |

| No | Variabel & Definition                                                                                                                                                                                                | Related Literature    | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | improvement or modernization of the process of forming ideas (Koryak et al. 2015)                                                                                                                                    |                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|    |                                                                                                                                                                                                                      | Borah et al 2022      | The results show that social media usage has a positive and significant direct influence on innovation capabilities and sustainable SMEs performance, and innovation capabilities also have a positive and significant direct impact on sustainable SME performance. In addition, findings reveal that social media usage can enhance sustainable SME performance when mediated by innovation capabilities and moderated by digital leadership. This study offers several theoretical and practical implications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|    |                                                                                                                                                                                                                      | Mihardjo et al 2019   | The results reveal that digital leadership based on dynamic capability impacts directly and indirectly on developing innovation. Market orientation also plays an important role in accelerating innovation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|    |                                                                                                                                                                                                                      | Theng et al, 2021     | Based on the results of data analysis, it is concluded that transformational leadership has a significant effect on Organizational Performance, transformational leadership has no significant effect on Work Innovation Capabilities, servant leadership has a significant effect on Organizational Performance, servant leadership has no significant effect on work innovation capabilities, digital transformation has no significant effect on organizational performance, digital Transformation has no significant effect on Work Innovation Capabilities, organizational performance has no significant effect on work innovation capabilities, transformational Leadership has no significant effect on Organizational Performance through Work Innovation Capabilities, Servant Leadership has no significant effect on Organizational Performance through Work Innovation Capabilities, digital transformation has no significant effect significant to the Organization al Performance through Work Innovation Capabilities. |
| 2  | <b>Innovation behaviour on innovation performance</b><br>"Innovative behavior is the act of employees in using personal experience to develop valuable ideas and create new products and services" (Li et al. 2019). | Dedahanoy et al, 2017 | The results suggest that innovative behavior mediates the links among centralization, formalization, and organizational innovation performance. However, the findings indicate that innovative behavior does not mediate the relationship between integration and organizational innovation performance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|    |                                                                                                                                                                                                                      | Li et al, 2019        | This study finds that Process Control has no moderating effect, and Output Control negatively moderates the effect of Corporate Responsibility for Employee on Employee Innovative Behaviour. Contrast to our prediction and previous studies, the Process Control does not enhance the positive effect of Employee Innovative Behaviour on Corporate Responsibility for Employees. This may be reasoned that, although Process Control may create a more favorable – relative to Ouput Control – atmosphere for innovation, the control mechanism in itself would restrict employee behaviors in a certain scope disregards the types                                                                                                                                                                                                                                                                                                                                                                                                   |

| No | Variabel & Definition                                                                                                                                                                                                                                                                                                                                                   | Related Literature                 | Result                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |                                                                                                                                                                                                                                                                                                                                                                         |                                    | of it. Perhaps the best effect of the control mechanisms for innovation may not be promoting it, but not handicapping it. This also could be caused by the aims of Employees Innovative Behaviour. A few extant research shows that if the aim of the behavior is to produce a better quality of the services, the result might be positive. Otherwise, it is likely to be negative (Pilar and Ana, 2016).                                                                                                                                                                                                             |
|    |                                                                                                                                                                                                                                                                                                                                                                         | Lukas & Stephan, 2017              | Employee innovative behavior was supported as comprising of idea generation, idea search, idea communication, implementation starting activities, involving others and overcoming obstacles. Managerial support was the most proximal contextual influence on innovative behavior and mediated the effect of organizational support and national culture                                                                                                                                                                                                                                                               |
| 3  | <b>The Moderating Role of Absorptive Capacity</b><br>"Absorptive capacity is the ability to acquire, assimilate, and then exploit information to improve firm performance Sripada, 2020). Absorptive capacity can also be defined as organizational activities that include the integration and utilization of knowledge to improve firm performance (Song et al. 2020) | Azzam, 2016                        | this study found that knowledge creation modes have a positive effect on enhancing architectural innovation capability. In addition, having architectural innovation capability enables firms to develop new products which play a major role in tapping into new markets. Taking into consideration new product development performance, this study found that absorptive capacity plays a moderator role to strengthen the effect of innovation capability on financial performance. Moreover, lead users' integration is found to enhance product quality, and shorten new product development cycle time           |
|    |                                                                                                                                                                                                                                                                                                                                                                         | Samaeemofrad & Van den herik, 2020 | The model and empirical results indicate that the performance of NTBFs is positively affected by knowledge development and dissemination of business incubators and this effect is moderated and implified through the absorptive capacity of the NTBFs. The results of this study increase our understanding about the effect of supports by BIs on the performance of NTBFs, which up to now was still unclear.                                                                                                                                                                                                      |
|    |                                                                                                                                                                                                                                                                                                                                                                         | Chatterjee et al, 2022             | The article finds that firms' intellectual capability, agility, and integration significantly impact the adoption of Emerging Technology, which in turn positively influences supply chain resilience of the firm along with Firm Performance. The article also highlights that there is a positive and significant moderating impact of firms' absorptive capability on the relationship between firm intellectual capital and adoption of Emerging Technology. Also, the article shows the moderating impact of Leadership Support on the relationship between adoption of Emerging Technology and Firm Performance. |
|    |                                                                                                                                                                                                                                                                                                                                                                         | Chung et al, 2022                  | The results indicate that the ratio of high-tech entrepreneurial activities has an inverted-U-shaped relationship with innovation efficacy. This study find that the level of absorptive capacity positively moderates this relationship. This study shows that the reckless increase of high-tech startups can harm the national economy. Therefore, the government should precisely understand the non-linear relationship between high-tech startups and the                                                                                                                                                        |

| No | Variabel & Definition | Related Literature | Result                                                                                                           |
|----|-----------------------|--------------------|------------------------------------------------------------------------------------------------------------------|
|    |                       |                    | nation's innovation capability, and strategically utilize R&D policies to maximize national innovation efficacy. |

### 3. Research Methodology

The population used in this study are the actors (owners, managers, or supervisors) of modern cafes and restaurants in Yogyakarta. Yogyakarta is known as the city of education and tourism; thus, the number of immigrants is increasing. Within the context of this city, one industry that quite reap the benefits is the culinary industry. The population is specifically chosen as currently going to cafes are considered a lifestyle and it continues to experience an increase in terms of the café's quality and quantity. Therefore, the subjects in this study are individuals who manage cafes and restaurants in Yogyakarta. The sampling technique in this study uses purposive sampling, which is done by determining the respondents using certain criteria. The criteria used in sampling are the owners, managers, or supervisors in cafes or restaurants in Yogyakarta. The café or restaurants must practice digital marketing and have Instagram account with at least 500 followers. The sample selected in this study included 100 respondents. Furthermore, the analysis in this study is quantitative with a structural equation model using Smart-PLS.

Furthermore, this study analyzes four variables, namely digital leadership, innovative behavior, innovation performance, and absorptive capacity. The digital leadership variable is measured by 4 indicators adopted from Benitez et al. (2022), namely:

1. The ability to exploit skills and technological trends
2. The ability to innovate in technological aspects, develop skills and IT implementation in the company
3. The ability to coordinate staff with different skills
4. The ability to influence stakeholders to adapt to change and advances in technology.

The innovative behavior variable is measured by 7 indicators adopted from Lukes & Stephan (2017), namely:

1. Idea generation (always thinking about creating new solutions and ideas)
2. Idea search (gathering information, knowledge, and opinions to create new ideas)
3. Idea communication (communicating ideas with others),
4. Implementation strating activities (planning the implementation of ideas)
5. Involving other (involving others in the implementation of ideas)
6. Overcoming obstacles (never giving up and trying hard)
7. Innovation outputs (successfully creating innovations).

The innovation performance variable is measured by 5 indicators adopted from Tang et al. (2013), namely:

1. Have better product functions than competitors
2. Have better product quality than competitors
3. Have continuous innovation
4. Having effectiveness in the product development process
5. Have a better speed of innovation than competitors

The absorptive capacity variable is measured using 6 indicators adopted from Samaemofrad & van den Herik, (2020):

1. The firm has a close relationship with consumers
2. Employees can understand external information for the benefit of the firm
3. There are many discussions of firm development within the scope of employees
4. The firm publishes firm information regularly
5. Important information within the firm is distributed quickly within the employee's circle
6. Employees and leaders often share opinions for the development of the firm.

## 4. Results

### Respondents' Characteristics

The respondents' in this study are characterized into several categories, namely gender, age, and education.

Table 2. Respondent Characteristics

| Characteristic     | Amount | Percentage |
|--------------------|--------|------------|
| <b>Gender</b>      |        |            |
| Male               | 41     | 17,9%      |
| Female             | 69     | 82,1%      |
| <b>Age</b>         |        |            |
| <20 years          | -      | 1,7%       |
| 20 – 30 years      | 25     | 35,4%      |
| 31 – 40 years      | 33     | 25,7%      |
| 41 – 50 years      | 42     | 22%        |
| >50 years          | 10     | 11%        |
| <b>Education</b>   |        |            |
| Elementary School  | -      | 5,2%       |
| Junior High School | -      | 7,4%       |
| Senior High School | 63     | 38,9%      |
| Bachelor           | 44     | 43,6%      |
| Magister           | 3      | 4,8%       |

Table 2 indicates that the majority of respondents in this study are female (82.1%). Furthermore, from the age aspect, the majority of respondents in this study were 20-30 years old (35.4%) and the education of the respondents had the most undergraduate education, namely 43.6% and senior high school 38.9%.

### Outer Model Evaluation

#### Validity

The reliability and validity of the constructs are assessed by outer model analysis. Convergent validity and construct validity are used in validity testing. For an indicator to be considered valid under convergent validity, its loading factor value must be at least 0.7. Moreover, a construct must have an AVE value of at least 0.5 in order to be deemed genuine. Table 2 belows displays the test results.

Table 3. Validity Analysis

| Variable                   | Indicators | Loading Factor | Validity | Loading Factors | Validity | AVE   |
|----------------------------|------------|----------------|----------|-----------------|----------|-------|
| <b>Digital Leadership</b>  | DL1        | 0.651          | Invalid  | -               | Dropped  | 0,796 |
|                            | DL2        | 0.923          | Valid    | 0.929           | Valid    |       |
|                            | DL3        | 0.818          | Valid    | 0.851           | Valid    |       |
|                            | DL4        | 0.881          | Valid    | 0.894           | Valid    |       |
| <b>Innovative Behavior</b> | IB1        | 0.921          | Valid    | 0.928           | Valid    | 0,784 |
|                            | IB2        | 0.889          | Valid    | 0.897           | Valid    |       |
|                            | IB3        | 0.865          | Valid    | 0.874           | Valid    |       |
|                            | IB4        | 0.873          | Valid    | 0.891           | Valid    |       |

|                               |     |       |         |       |         |       |
|-------------------------------|-----|-------|---------|-------|---------|-------|
|                               | IB5 | 0.890 | Valid   | 0.900 | Valid   |       |
|                               | IB6 | 0.818 | Valid   | 0.818 | Valid   |       |
|                               | IB7 | 0.511 | Invalid | -     | Dropped |       |
| <b>Innovation Performance</b> | IP1 | 0.849 | Valid   | 0.846 | Valid   | 0,726 |
|                               | IP2 | 0.867 | Valid   | 0.865 | Valid   |       |
|                               | IP3 | 0.817 | Valid   | 0.818 | Valid   |       |
|                               | IP4 | 0.897 | Valid   | 0.899 | Valid   |       |
|                               | IP5 | 0.828 | Valid   | 0.830 | Valid   |       |
|                               |     |       |         |       |         |       |
| <b>Absorptive Capacity</b>    | AC1 | 0.915 | Valid   | 0.915 | Valid   | 0,767 |
|                               | AC2 | 0.859 | Valid   | 0.859 | Valid   |       |
|                               | AC3 | 0.813 | Valid   | 0.813 | Valid   |       |
|                               | AC4 | 0.903 | Valid   | 0.903 | Valid   |       |
|                               | AC5 | 0.888 | Valid   | 0.888 | Valid   |       |
|                               | AC6 | 0.875 | Valid   | 0.875 | Valid   |       |

Table 3 presents the outer model evaluation process in this study. The first analysis indicates that in evaluating convergent validity, two indicators are found to be invalid as they had a loading factor value of  $<0.7$ , namely DL1 and IB7, thus the indicators must be dropped from the analysis. After removing invalid indicators, it is found that all indicators had a loading factor value of  $>0.7$  and are concluded to be valid. The construct validity analysis is also shown in Table 2, where all variables have an AVE value of  $>0.5$ , indicating that they all meet the validity requirements.

### Reliability

The reliability value refers to the composite reliability value which is stated to have a value of  $\geq 0.7$  and the Cronbach's alpha value which is required to be  $\geq 0.6$ .

Table 4. Reliability Analysis

|                               | <b>Cronbach's Alpha</b> | <b>Composite Reliability</b> |
|-------------------------------|-------------------------|------------------------------|
| <b>Digital Leadership</b>     | 0.872                   | 0.921                        |
| <b>Innovation Performance</b> | 0.906                   | 0.930                        |
| <b>Innovative Behavior</b>    | 0.945                   | 0.956                        |
| <b>Absorptive Capacity</b>    | 0.943                   | 0.952                        |

Reliability analysis is also needed in this study by referring to the composite reliability value. The composite reliability value on all variables shows a value of  $>0.7$  and the Cronbach's alpha of all variables has a value of  $\geq 0.6$ , thus it is concluded that the variables in this study are reliable.

### Inner Model Evaluation

Inner model evaluation includes several tests, namely the coefficient of determination, goodness of fit, and hypothesis testing. Hypothesis testing is carried out with PLS bootstrapping with the output presented in Figure 1.

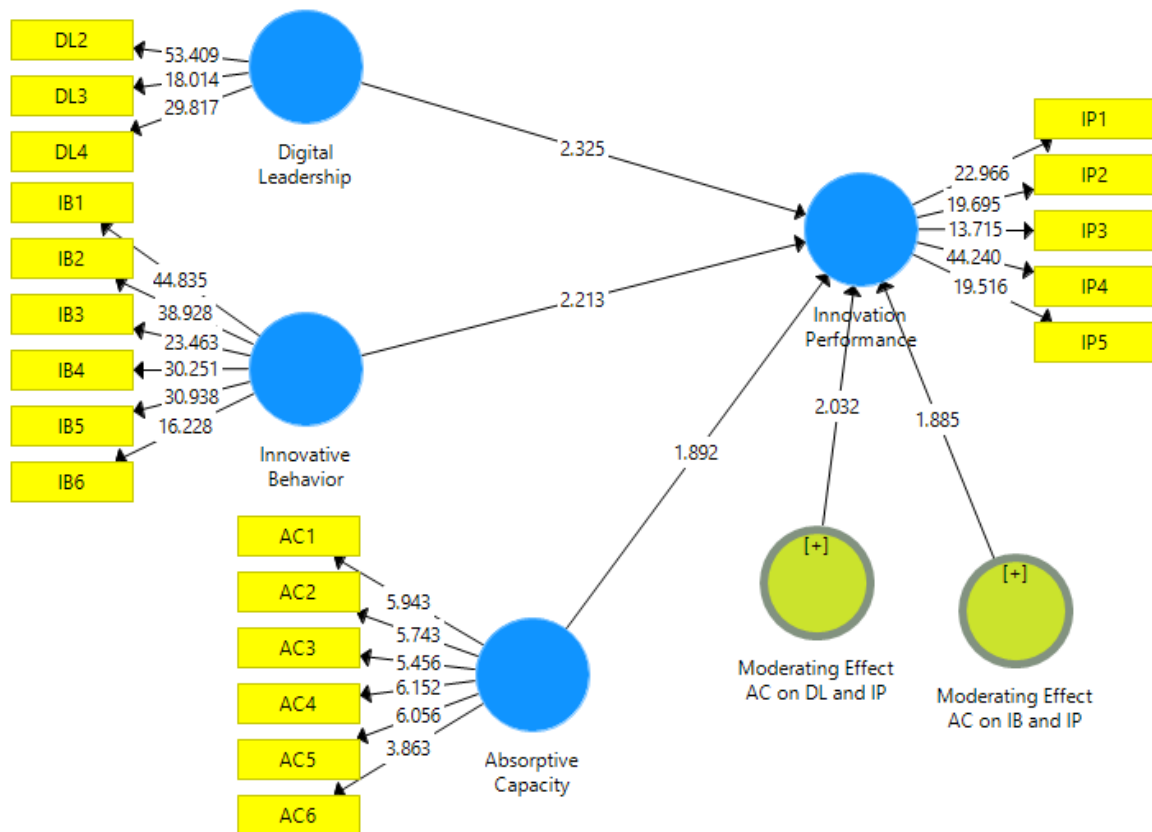


Fig.1: Inner Model

### R Square

The coefficient of determination can be seen in the R-square table by multiplying the R-square value by 100%. The coefficient of determination shows the amount of influence of exogenous variables on endogenous variables, with the results presented in Table 4.

Table 5. R-Square

| Variabel Endogen        | R Square |
|-------------------------|----------|
| Innovation _Performance | 0.551    |

Table 5 shows that the innovation performance variable is influenced by exogenous variables in this study by 55.1% while the rest is influenced by other variables outside the study.

### Goodness of Fit

The GoF index is calculated from the square root of the average communality index and the average R-squared value. GoF = 0.1 means small, GoF = 0.25 means medium, GoF = 0.36 means large. The GOF value can be calculated using the following formula:

$$\text{Goodness of fit} = \sqrt{\text{Communality} \times R^2}$$

The calculation results are presented in Table 6.

Table 6. Results of Goodness of Fit Model (GoF)

| Construct           | Communality | R Square |
|---------------------|-------------|----------|
| Digital _Leadership | 0.560       |          |

|                               |       |       |
|-------------------------------|-------|-------|
| <b>Innovation_Performance</b> | 0.581 | 0.551 |
| <b>Innovative_Behavior</b>    | 0.689 |       |
| <b>Absorptive Capacity</b>    | 0.656 |       |
| <b>Average</b>                | 0,621 | 0,551 |
| <b>GoF</b>                    | 0,584 |       |

Based on Table 5, it can be seen that the GoF value of the model reaches 0.584 which is greater than 0.36, thus the model is included in the large category.

### Hypothesis Test

The measurement item is significant if the T-statistic value is greater than 1.96 and the p value is smaller than 0.05 at the 5% significance level. The parameter coefficient that shows the direction of influence is by looking at the positive or negative value of the original sample (Ghozali, 2008). The results of hypothesis testing are presented in Table 7.

Table 7. Path Coefficients

|                                                      | <b>Original<br/>Sample</b> | <b>T<br/>Statistics</b> | <b>P Values</b> |
|------------------------------------------------------|----------------------------|-------------------------|-----------------|
| Digital_Leadership -> Innovation_Performance         | 0.329                      | 2.325                   | 0.020           |
| Innovative_Behavior -> Innovation_Performance        | 0.404                      | 2.213                   | 0.027           |
| Moderating Effect AC on DL -> Innovation_Performance | 0.376                      | 2.032                   | 0.043           |
| Moderating Effect AC on IB -> Innovation_Performance | 0.293                      | 1.885                   | 0.060           |

Table 7 indicates the results of path analysis in this study with the following details:

1. Digital leadership has a positive and significant influence on innovation performance. These results are evidenced by the t statistic value of >1.96, namely 2.325 and the p-value of <0.05, namely 0.020, thus H1 is supported.
2. Innovative behavior has a positive and significant influence on innovation performance. These results are evidenced by the t statistic value of >1.96, namely 2.213 and the p-value of <0.05, namely 0.027, thus H2 is supported.
3. Absorptive capacity is able to significantly moderate the influence of digital leadership on innovation performance. These results are evidenced by the t statistic value of >1.96, namely 2.032 and the p-value of <0.05, namely 0.043, thus H3 is supported.
4. Absorptive capacity is not able to significantly moderate the influence of innovative behavior on innovation performance. These results are evidenced by the t statistic value of <1.96, namely 1.885 and the p-value of >0.05, namely 0.06, thus H4 is not supported.

## 5. Discussion

This study analyzes the influence of digital leadership and innovative behavior on innovation performance. The analysis is conducted on 110 managers, owners, and supervisors of modern cafes and restaurants in Yogyakarta. The results of the analysis using the structural equation model with SmartPLS indicate that the three out of four hypotheses formulated in this study are empirically supported. The first hypothesis in this study is that digital leadership positively influence innovation performance. The results of the analysis prove that the first hypothesis in this study is supported, thus the better the implementation of digital leadership, the better the firm's innovation performance and vice versa. The results of the first hypothesis are in line with several previous studies that have been carried out (Benitez et al., 2022; Borah et al. 2022; Miwardjo et al. 2019; Sasmoko et al. 2019; Miwardjo & Rukmana, 2019) which also states the positive influence of digital leadership on innovation

performance. However, it is contrary to the study from Theng et al. (2021; Muniroh et al. 2022) which states that there is no influence of digital leadership on innovation performance.

Digital leadership can be optimized in improving innovation performance through firm digitization. Firms must be able to implement digital platforms in their business processes and activities (Benitez et al. 2022). Borah et al. (2022) found that digital leadership can have a direct influence on firm innovation and is also able to moderate the influence the use of social media on firm innovation. Therefore, it can be interpreted that the better the implementation of digital leadership, the more it can increase innovation through the use of social media. To optimize digital leadership, there are 4 aspects that must be considered, namely the ability to exploit technological skills and trends, the ability to innovate in technological aspects, develop IT skills and implementation in the company, the ability to coordinate staff with various skills, and the ability to influence stakeholders to adapt to changes and technological advances.

Furthermore, the second hypothesis in this study is that innovative behavior has a positive influence on innovation performance. The results of the analysis suggest that the second hypothesis is supported, thus it is proven that the better the innovative behavior in the firm, the higher the innovation performance will increase, and vice versa. This finding is also supported by several previous studies, namely Dedahanov et al. (2017; Li et al. 2019; Lukes & Stephan, 2017) which stated that innovative behavior has a positive influence on innovation performance. However, this finding differs from Purwanto et al. (2021) who analyzed the role of innovation in Indonesian consumer goods companies and found that there is no influence of innovation on firm performance.

Innovative behavior is the act of employees in using personal experience to develop valuable ideas and create new products and services (Li et al. 2019). The ideas and creativity developed will improve the innovation performance of the firm and help them produce innovative products and services. To optimize innovative behavior, there are seven aspects that must be considered, namely idea generation (always thinking about creating new solutions and ideas), idea search (gathering information, knowledge and opinions to create new ideas), idea communication (communicating ideas with others), implementation planning activities (planning the implementation of ideas), involving others (involving others in the implementation of ideas), overcoming obstacles (never giving up and trying hard) and innovation outputs (successfully creating innovations). Digital leadership provides technological advantages that will increase the competitive advantage for the firm. The development of technology in this era is very rapid and firms require leaders who are able to optimize the use of digital and technology. Firms must be directed and designed to be adaptable and able to keep up with digital and technological developments. Weill & Ross (2009) stated that firms in this era must standardize technology, develop infrastructure cooperation, improve discipline, and create integrated data to achieve simplification and agility.

In many firms, recent digital technologies have driven significant changes in the competitive and organizational environment and roles. Changes are required in many organizational dimensions such as roles, work culture, and technology. Transformation programs are designed to drive adjustments to meet real short-term needs while creating a new basis for an uncertain future. Digital leaders need to have a set of skills to address these challenges and help organizations move forward with the transition (Frank et al., 2019; Somerville, 2013). Therefore, as a new set of skills is required to effectively lead organizations into an uncertain and more dynamic future, leaders have a significant role. For example, it is a significant challenge for digital leaders to inspire people to work with new technological tools that may or may not be used due to the uncertainty of the digital future at its core. Currently, many leaders do not have the necessary skills to be resilient digital leaders, but the good point is that they are starting to develop the skills needed (Katsos & Fort, 2016). Furthermore, this study found that absorptive capacity is able to moderate or strengthen the influence of digital leadership on innovation performance, thus hypothesis 3 in this study is supported. These results are supported by several previous studies such as Chung et al. (2022) who found that absorptive capacity can strengthen the

influence of digital adoption on firm innovation. However, this study indicates that absorptive capacity cannot moderate the influence of innovative behavior on innovation performance, hence hypothesis 4 is not supported. These findings contradict the study from Azzam (2016) which found that absorptive capacity can strengthen the influence of employee innovation in improving the firm's innovation performance.

Absorptive capacity is an organizational activity that includes the integration and utilization of knowledge to improve company performance (Song et al. 2020). Absorptive capacity is also expressed as the firm's ability to create value, build cooperation, and exploit new ideas (Pangarso et al. 2020). The concept of absorptive capacity has become an important ability for firms to create competitiveness by developing new products or increasing flexibility (Sripada, 2020). In this regard, digital leadership and innovative behavior need to be strengthened by employees' ability to explore information, which is known as absorptive capacity (Azzam, 2016; Samaeemofrad & van den Herik, 2020; Chatterjee et al. 2022; Li et al. 2022). Azzam (2016) found that absorptive capacity can strengthen the influence of employee innovation in improving firm innovation performance. In addition, Chung et al. (2022) found that absorptive capacity can strengthen the influence of digital adoption on firm innovation. This research emphasizes the importance of digital leadership and innovative behavior in creating the best innovation performance in the firm. Firms must optimize their business activities with digital leadership and enhance innovative behavior of their employees. With these two components, firms will be able to create innovations in marketing their products and services.

## 6. Conclusion

This study provides empirical evidence on the significant impact of digital leadership and innovative behavior on innovation performance in the restaurant industry. Fostering these organizational capabilities can enable cafes/restaurants to develop novel products, services and processes to stay competitive. The findings also highlight the value of absorptive capacity in strengthening digital leadership's impact. Overall, investing in digital leadership training programs, incentivizing innovative thinking among staff, and enhancing knowledge absorption capacities emerge as key priorities for restaurant owners and managers aiming to boost innovation outcomes.

## 7. Research Limitations and Future Research Agenda

This study analyzes the influence of digital leadership and innovative behavior on innovation performance as well as the moderating role of absorptive capacity. The limitation in this study is that it only analyzes the culinary sector, therefore further research is expected to analyze other sectors. Furthermore, the analysis in this study is still limited to innovation performance, while there are still many aspects of the firms that need to be explored such as firm performance, marketing performance, competitive advantage, and company sustainability.

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